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The
**Condensed Chemical
Dictionary**

SEVENTH EDITION

Completely revised and enlarged by
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END PAPER (FRONT): Styrene Plant of Monsanto Corp., Texas City
END PAPER (REAR): Catalytic Reforming Unit of Gulf Oil Co., Port Arthur, Tex.

oxidized oils. See blown oils; also blown asphalts.

oxidizer (special). See rocket propellants.

oxidoreductase. A class of enzymes. See enzymes.

oxine. Synonym for 8-hydroxyquinoline.

oxirane. A synonym for ethylene oxide, H_2COCH_2 .

Hence an oxirane group is one having the structure

=COC= , and is one kind of an epoxy group.

"Oxitol."¹²⁵ Trademark for ethylene glycol monoethyl ether having an A.S.T.M. distillation range 134-136°C.

gamma-oxo-gamma-(8-fluoranthene)butyric acid. See fluorantyrone.

"Oxone."²⁸ Trademark for an acidic, white, granular, free-flowing solid containing the active ingredient potassium peroxymonosulfate; readily soluble in water; 1% solution has pH of 2-3. Minimum active oxygen content 4.5%. Strong oxidizing agent.

Containers: 50-lb bags.

Uses: For manufacture of dry laundry bleaches, detergent-bleach washing compounds, scouring powders, plastic dishware cleaners, and metal cleaners; preparation of hair wave neutralizers and pharmaceuticals; general oxidizing reactions.

2-oxopentanedioic acid. See alpha-ketoglutaric acid.

4-oxopentanoic acid. See levulinic acid.

oxphenarsine hydrochloride. U.S.P. XVII name for 2-amino-4-arsenosphenol hydrochloride.

Oxo process. Production of alcohols, aldehydes and other oxygenated organic compounds by passage of olefin hydrocarbon vapors over cobalt catalysts in the presence of carbon monoxide and hydrogen gases. Aldehydes are produced as products, but in most cases these are hydrogenated at once to produce the corresponding alcohol. Propylene produces normal and isobutyraldehyde; higher olefins produce a mixture of aldehydes containing one more carbon atom than the olefins. n-Butyl, isobutyl, amyl, iso-octyl, decyl and tridecyl alcohols are produced in large quantities.

oxosilanes. See siloxanes.

oxtriphylline (choline theophyllinate; theophylline choline) $\text{C}_7\text{H}_8\text{N}_4\text{O}_2 \cdot (\text{CH}_3)_3\text{NC}_2\text{H}_4\text{OH}$.

Properties: White crystalline solid (contains about 60% anhydrous theophylline). Extremely soluble in water.

Use: Medicine.

oxy-. The -O- radical. Sometimes represents the hydroxy radical, -OH , but this is not considered good usage in the United States.

oxycanthine (vinetine) $\text{C}_{37}\text{H}_{40}\text{N}_2\text{O}_6$. An alkaloid.

Properties: White crystalline powder, needles from alcohol or ether; m.p. 202-214°C; soluble in water, chloroform, benzene, alcohol, and ether.

Derivation: Occurs in the root of *Berberis vulgaris*.

Use: Medicine.

oxybenzoic acids. See hydroxybenzoic acids.

para,para'-oxybis(benzenesulfonylhydrazide)

$\text{H}_2\text{NNHSO}_2\text{C}_6\text{H}_4\text{OC}_6\text{H}_4\text{SO}_2\text{NHNH}_2$.

Properties: Fine white crystalline powder; odorless; sp. gr. 1.52; m.p. decomposes at 150-160°C; soluble

in acetone; moderately soluble in ethanol and polyethylene glycols; insoluble in gasoline and water.

Use: Blowing agent for sponge rubber and expanded plastics.

oxyconiline. See conhydrine.

oxydemetonmethyl. Generic name accepted by the Entomol. Soc. Am. for S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate. See O,O-dimethyl S-2-(ethylsulfinyl)ethyl phosphorothioate.

N-oxydiethylene-2-benzothiazolesulfenamide. See 2-(morpholiniothio)benzothiazole.

beta,beta'-oxydipropionitrile (ODPN) $\text{O}(\text{CH}_2\text{CH}_2\text{CN})_2$. Properties: Colorless liquid; m.p. -26.3°C ; b.p. 120°C (1 mm); b.p. 155°C (5 mm); sp. gr. 1.0405 (30°C); viscosity (30°C) 8.00 cp; refractive index (n 25/D) 1.4392; flash point, Tag (closed cup) greater than 176°F ; soluble in water. It is thermally unstable, yielding acrylonitrile and water above 175°C . Hydrolyzed by strong acids and bases; quite immiscible with paraffin hydrocarbons, but dissolves aromatics.

Derivation: From acrylonitrile.

Use: Solvent in fractional extraction.

oxyethylene oxypropylene polymer. See poloxalkol.

"Oxyfume."²¹⁴ Trademark for a sterilant mixture of ethylene oxide and either carbon dioxide or dichlorodifluoromethane. The colorless and tasteless gas has excellent penetrating ability and a sweet ether odor. Available as: "Oxyfume" Sterilant-20, 20% ethylene oxide and 80% carbon dioxide by weight and gas volume; "Oxyfume" Sterilant-12, a mixture of 12% ethylene oxide and 88% dichlorodifluoromethane by weight.

Uses: A sterilant for delicate instruments, supplies made of metal, glass, plastic, rubber, paper, fiber or wood. The gas penetration permits medical, dental and pharmaceutical equipment plants to sterilize materials which cannot be autoclaved with steam. This makes it possible to package and pre-sterilize items for use in hospitals, clinics and laboratories.

oxygen O. Element of atomic number 8; group VI of the periodic table.

Properties: Colorless, odorless, tasteless diatomic gas, liquefiable at -183°C into a slightly bluish liquid, which is solidifiable at -218°C . It constitutes roughly one-fifth (by volume) of the air. (Gas) Sp. gr. 1.10535, referred to air. Sp. gr. (liquid) 1.14 (-183°C). Soluble in molten silver; slightly soluble in water.

Derivation: (a) From liquid air by fractionation to remove the other gases of the air; (b) by electrolysis of water.

Impurities: Nitrogen, carbon dioxide, water vapor, ammonia, argon, helium and other rare gases.

Grades: Low purity; high purity; U.S.P. XVII.

Containers: As a compressed gas: in steel cylinders or "gas-bottles;" as a liquid: in vacuum-jacketed containers which range in size up to an entire truck load.

Uses: To increase capacity of steel and iron furnaces; with hydrogen or acetylene for production of exceedingly hot flames for cutting and welding metals, including platinum; for resuscitation in asphyxia and stimulation in various diseases; in combustion to promote better utilization of fuel; as a constituent

*See "Shipping Regulations," page xv.

Reference numbers refer to name of manufacturer. See "List of Manufacturers," page v.

Numerical List of Manufacturers

(For addresses, see Alphabetical List of Manufacturers, page viii)

1. Stauffer Chemical Co.
3. Abbott Laboratories
4. Rhode Island Laboratories, Inc.
5. Firestone Tire & Rubber Co.
7. The Sanforized Co.
8. Scientific Chemicals, Inc.
9. Knoll Pharmaceutical Co.
10. Van Dyk & Co., Inc.
11. Koppers Co., Inc.
12. Sindar Corporation
13. Formica Corporation
15. Armour Industrial Chemical Co.
16. Arthur H. Thomas Co.
17. Heresite & Chemical Co.
18. Central Scientific Co.
19. Interchemical Corporation; Organic Chemicals Department
20. Corning Glass Works
21. Neville Chemical Co.
22. UBS Chemical Company
23. Rohm & Haas Co.
24. Wyeth Laboratories
25. Pennsylvania Refining Co.
27. Thiokol Chemical Corporation
28. E. I. du Pont de Nemours & Co.
29. Enjay Chemical Co.
30. Corn Products Co.
31. Handy & Harman
35. Firestone Plastics Co.
36. Reichhold Chemicals, Inc.
38. Sierra Talc & Chemical Corporation
40. V-C Chemical Co.
41. Atlas Minerals and Chemicals Division; The Electric Storage Battery Co.
42. Sun Chemical Corporation
45. Sonneborn Division; Witco Chemical Co., Inc.
46. Acheson Colloids Co.
47. The Duriron Company, Inc.
48. Crown Zellerbach Corp.
49. W. A. Cleary Corporation
50. Allied Chemical Corp.; General Chemical Division
51. Humble Oil & Refining Co.
52. Rubber Corporation of America
53. National Starch and Chemical Corporation
54. Carrier Corporation
55. FMC Corporation
56. Canadian Industries Ltd.
57. American Cyanamid Co.
58. Monsanto Co.
60. Cerro Sales Corporation
62. Hooker Chemical Corporation
63. The Richardson Co.
64. Spencer Kellogg
65. Borden Chemical Co.
67. Climax Molybdenum Co.
69. R. T. Vanderbilt Co., Inc.
70. G. D. Searle & Co.
71. Smith Kline & French Laboratories
73. Glyco Chemicals, Inc.
74. Tenneco Chemicals, Inc.; Nuodex Division
77. American Celcure Wood Preserving Corp.
79. Tenneco Chemicals, Inc.; Newport Division
81. Wood Ridge Chemical Corporation
82. Graphite Metallizing Corporation
84. Olin Mathieson Chemical Corporation
85. Shulton Inc.
88. American Potash & Chemical Corp.
89. Atlas Chemical Industries, Inc.
90. Brett Corporation
91. Schwarz BioResearch, Inc.
92. Masonite Corporation
93. Tennessee Corporation
94. The C. P. Hall Co.
97. Chesebrough-Pond's Inc.
98. Floridin Co.
99. Minerals & Chemicals Philipp Corporation
100. Eli Lilly and Co.
103. Arthur S. Hoyt Co., Inc.
104. Witco Chemical Co., Inc.
105. Polak's Frutal Works, Inc.
106. American Mineral Spirits Co.
107. American Norit Co., Inc.
108. Calgon Corporation
109. Arapahoe Chemicals, Inc.
110. United Carbon Co.
114. Premier Malt Products, Inc.
115. Eastman Kodak Co.
116. Allis-Chalmers
117. Alox Corporation
118. California Industrial Minerals Co.
119. B. F. Goodrich Chemical Co.
121. The American Can Co.
122. G & A Laboratories, Inc.
123. Merck & Co., Inc.
124. Marine Colloids, Inc.
125. Shell Chemical Co.
126. The Pacific Lumber Co.
128. Bareco Division; Petrolite Corp.
129. Weyerhaeuser Co.
133. Columbian Carbon Co., Inc.
134. The Harshaw Chemical Co.
136. The Atlantic Refining Co.
137. Jefferson Chemical Co., Inc.
138. Tenneco Chemicals, Inc.; Heyden Division
139. Moores Lime Co.
140. Pennsylvania Industrial Chemical Corporation
141. The Sherwin-Williams Co.
142. Enthone Incorporated
144. Airco Chemical Co.
145. Lithcote Corporation
147. Chipman Chemical Co.
148. National Lead Company; De Lore Division
149. Dow Corning Corporation
151. Chevron Chemical Co.; Oronite Division
152. Swift & Company